Annex to 2010 Association of Bay Area Governments Local Hazard Mitigation Plan *Taming Natural Disasters*

City of Alameda

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Introduction

The City of Alameda is a moderately sized city in Alameda County, California. It is situated 7 miles east of San Francisco within San Francisco Bay. The City is 22.7 square miles a map of the City's jurisdictional boundary is provided in **Exhibit A**. The City has a population of 75,409 based on the California Department of Finance's May 2010 Report. It has 32,000 dwelling units. It is bounded on the north and east by the City of Oakland and on the south and west by the beautiful San Francisco bay. The City's annual operating budget is approximately $67 million, currently employing 535 full-time personnel.

Major government facilities include the City Hall and City Hall West, the Police Station, a Public Works Maintenance Service Center and Central Garage, an Animal Shelter, a Golf Course, a Main Library as well as two branch libraries, one senior center, and five fire stations. The City also owns and operates a municipal power company.

The Regional Planning Process

The City of Alameda participated in various Association of Bay Area Governments (ABAG) workshops, conferences, and meetings, including:

- Lifeline and Hazard Review Committee on December 8, 2009
- City-County Workshop on May 8, 2009
- Sewer Smart Summit on October 9, 2008

In addition, the City of Alameda has provided written and oral comments on the multi-jurisdictional plan and provided information on facilities that are defined as "critical" to ABAG.

The Local Planning Process

Staff on the planning team included representatives from the following departments: City Manager's Office, Public Works, Alameda Municipal Power (AMP), Community Development, Information Technology (IT), Police, and Fire. The team reviewed the 2005 plan and provided comments to strengthen the document. Sign in sheets captured team member participation throughout the planning process. Planning team members provided lists of critical facilities and infrastructure (**Exhibit C**) their departments are responsible for, past retrofits of city buildings, ordinances that have been implemented to encourage retrofitting, and ongoing and future projects to mitigate the hazards identified by ABAG, and those hazards identified by the planning team. The City of Alameda's approach involved a collaborative, informal review and discussion of materials. Partner agencies including the School District, Alameda Hospital, EBMUD, PG&E, and AT&T were contacted for input to the planning process and provided data to be included in the plan. The public was involved through public meetings and one citizen volunteer from the Alameda CERT Executive Committee was also part of the planning team.

Review and Incorporation of Existing Information

In the preparation of this Annex, the City reviewed the studies and information used in the development of ABAG regional "umbrella" plan. In addition, the City reviewed its General Plan's Safety Element, Soft Story Program, and Emergency Operations Plan. Included are a discussion of seismic, geologic and soils hazards, fire hazards, and flooding. Also, the City enforces the requirements of the California Environmental Quality Act (CEQA) which, since 1988, have required mitigation for identified natural hazards. The City's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Existing plans, studies, reports, and technical information	**Method of incorporation into the jurisdiction annex**
City of Alameda General Plan, Health and Safety Element	Hazards Assessment and priority mitigation actions
California Environment Quality Act (CEQA)	Priority mitigation actions and programs
Emergency Operations Plan	Disaster Action Plan
Soft Story Program	Voluntary Program to identify and retrofit soft story buildings

Process of Updating Plan Sections

The planning team reviewed the 2005 plan and made updates to reflect progress made since the 2005 plan was adopted, including implementation of ordinances that align with the regional strategies (http://www.abag.ca.gov/bayarea/eqmaps/mitigation/stratlist.html) and seismic improvements to critical infrastructure.

The team then examined the state of the city's assets and other infrastructure that was not included in the 2005 plan but was viewed as critical by today's standards and developed a list of projects that would further improve resiliency of the city based on the hazards identified as most eminent.

The updates include new data regarding recent occurrences of natural hazards as well as updated information on risk assessment with new data provided by ABAG.

Public Meetings

Opportunity for public comments on the DRAFT mitigation strategies was provided at a public meeting at City Hall on October 18, 2011; which was advertised on the front page of the City of Alameda website. The objectives of this public meeting included opportunity for review of the draft document, public comment and response.

The draft mitigation strategies were also published on the ABAG website http://quake.abag.ca.gov/mitigation/2010annex/. Copies of the internet posting and public

meeting advertisement are included as **Exhibit B** to the City of Alameda 2010 Annex. Public comments were received at the public hearing or in response to the internet posting on the city's website. The City Council will also adopt the plan in a public hearing format that will provide further opportunities for public comment. After adoption of the plan, the City will work with the local media to further publicize the local annex document and make the public more aware of the issues and strategies facing the City. Ultimately, once adopted by the council, the mitigation strategies will become an implementation appendix of the Health and Safety Element of the City of Alameda General Plan.

Hazards Assessment

The ABAG Multi-Jurisdictional Local Hazard Mitigation Plan (MJ-LHMP), to which this is an annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). These hazards impact The City of Alameda, except for landslides due to its flat terrain. Also, wildfire is an unlikely event as Alameda is an island separated from the mainland by the Oakland Estuary.

The City of Alameda has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), liquefaction, flooding, and tsunamis are more imminent than landslides, wildfire and droughts.

In the 2005 plan, tsunamis were not identified as a significant hazard to the City. However new evacuation planning maps produced by the State of California Earthquake and Tsunami Program, the University of California Tsunami Research Program and the State of California Geological Survey shows the entire Bay Area ocean and inner bay coastline (except for northern Sonoma County) may be at risk. These studies were released in December 2009 as part of a CalEMA-led effort. These maps are worst-case scenario maps that aggregate all the potential sources of tsunamis. It is important to note that these maps were created for the purpose of evacuation planning and should not be used as a tool for the prediction of hazards. Based on Plate 43 and Appendix C of the Multi-Jurisdictional Local Hazard Mitigation Plan, as well as more detailed maps at: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/Alameda/Pages/Alameda.aspx, a large portion of the City of Alameda is within the tsunami inundation area.

While the City has undertaken a number of general mapping activities, none of the mapping activities are representative of the hazards to the city. The City used the hazard maps that are shown on the ABAG website to assess the risk to the city. http://quake.abag.ca.gov/mitigation/ .

Past Occurrences of Disasters (natural and human-induced)

The City of Alameda is situated parallel to the Hayward fault, which is approximately four miles away. ABAG and the U. S. Geological Survey have estimated that within this region there is a 62% potential of a magnitude 6.7 or greater earthquake occurring within the next 30 years. Based upon the modified Mercalli scale, the City of Alameda sits in the zone showing a potential of IX-

Violent Shaking that will produce heavy damage. Damage to masonry buildings ranges from collapse to serious damage unless they are of modern design. Wood-frame structures will be shifted off their foundations if they are not bolted. Underground pipes can be broken as well.

The 1989 Loma Prieta Earthquake caused $2.1 million in damages to City of Alameda properties. Damages included broken water mains in three locations, broken sewer lines in various locations, street displacement and sand boils on numerous streets, curbs/gutters, and bulkhead damage. The dollar amount of losses to private properties is not included here. However, there was private property damage such as fuel tank displacement, water service line displacement, bulkhead/rip-rap damage, private road/sand boils, and chimney and foundation damage. Also, there was full displacement of the military runway at Alameda Point.

More information on State and Federally declared disasters in the City of Alameda can be found at http://quake.abag.ca.gov/wp-content/documents/ThePlan-D-2011.pdf.

February 27,2010 – Chile Earthquake/Tsunami.
State EOC activated. Alameda County EOC monitored situation. The City of Alameda also monitored the situation because of city property bordering the San Francisco Bay.

April 28, 2009 – H1N1 Flu (Swine Flu)
The flu disaster was a global outbreak of a new strain of the H1N1 influenza virus. It was first discovered in Veracruz, Mexico. Many Bay Area schools were closed due to concerns about spreading the virus to which young people were more susceptible. The City of Alameda participated with the County in setting up "Point of Distribution" (POD) locations to provide prophylactic vaccinations to the public.

February 27, 2009 – Drought
There was a three year drought of below-average rainfall, low snowmelt runoff, and the largest court-ordered water restriction in state history. The dry conditions caused deteriorated water quality, and extreme fire danger in the region.

November 9, 2007 – Oil Spill (COSCO BUSAN)
The container ship COSCO Busan operated by Fleet Management Ltd. struck the Delta Tower of the San Francisco - Oakland Bay Bridge in thick fog, and spilled 53,500 US gallons of heavy oil fuel into San Francisco bay. As a result of the tides, the spill spread rapidly and affected a large of area of the California North Coast. The East Bay received the majority of the damage.

April 29, 2007 – Freeway Collapse
A tanker truck exploded on the Oakland to San Francisco Bay Bridge, which caused a connector ramp to collapse. This caused traffic delays, especially for commuters. All routes for vehicular access to the City of Alameda were routed to highways and surface roads of Oakland.

January 1, 2006. Winter Storms
Storms struck the Bay Area causing damage to Alameda's shoreline due to tidal action from the San Francisco Bay. Alameda County was one of 17 counties that the federal government declared as disaster areas after the storms that year.

Risk Assessment

Urban Land Exposure

The planning team examined the hazard exposure of the City of Alameda urban land, based on information in ABAG's website at http://quake.abag.ca.gov/mitigation/landuse/. The "2005 *Existing Land Use with 2009 Hazard Mapping"* file was used for this evaluation (in the existing plan, the file used was "Existing Land Use in 2000").

The City of Alameda actually reduced the acres of urban land in the 100 year flood zone over the last 5 years due to changes in the new FEMA flood maps. The following table describes the exposure of urban land within the City of Alameda to the various hazards.

Exposure (acres of urban land)			
Hazard	**Plan Year 2005**	**Plan Year 2010**	**Change**
Total Acres of Urban Land	*6,452*	*6,527*	*75*
Earthquake Faulting (within CGS zone)	0	0	0
Earthquake Shaking (within highest two shaking categories)	5,861	5,970	109
Earthquake-Induced Landslides (within CGS study zone)	0	0	0
Liquefaction (within moderate, high, or very high liquefaction susceptibility)	6,105	6,079	(26)
Flooding[1] (within 100 year floodplain)	522	348	(174)
Flooding (within 500 year floodplain)	75	243	168
Landslides (within areas of existing landslides)	0	0	0
Wildfire (subject to high, very high, or extreme wildfire threat)[2]	7	11	4
Wildland-Urban Interface Fire Threat	1,336	1,356	20
Dam Inundation (within inundation zone)	0	0	0
Sea Level Rise[3]	not applicable		
Tsunamis (within inundation area)[4]	not applicable		
Drought[5]	6,452	6,527	75

[1] The decrease is due to better and more accurate mapping.
[2] The increase is due to better and more accurate mapping.
[3] The sea level rise map is not a hazard map. It is not appropriate to assess infrastructure exposure to sea level rise.
[4] Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. Acres of exposed land are not an appropriate analysis for this hazard. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.
[5] The entire City of Alameda (6,527 acres) is subject to drought.

Infrastructure Exposure- Roadway, Transit, and Rail

The planning team examined the hazard exposure of infrastructure within the jurisdiction based on the information on ABAG's website at http://quake.abag.ca.gov/mitigation/landuse/. Of the 142 miles of roadway and 5 miles of rail in the City of Alameda, the following are exposed to the various hazards analyzed.

Exposure (miles of infrastructure)						
Hazard	**Roadway**		**Transit**		**Rail**	
	Plan Year 2005	**Plan Year 2010**	**Plan Year 2005**	**Plan Year 2010**	**Plan Year 2005**	**Plan Year 2010**
Total Miles of Infrastructure	*176*	*142*	*0*	*0*	*9*	*5*
Earthquake Shaking (within highest two shaking categories)	170	133	0	0	7	4
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility	170	113	0	0	9	4
Liquefaction Hazard (within CGS study zone)	168	113	0	0	9	5
Earthquake-Induced Landslides (within CGS study zone)	0	0	0	0	0	0
Earthquake Faulting (within CGS zone)	0	0	0	0	0	0
Flooding (within 100 year floodplain)	2	2	0	0	0	1
Flooding (within 500 year floodplain)	1	2	0	0	0	0
Landslides (within areas of existing landslides)	0	0	0	0	0	0
Wildfires (subject to high, very high, or extreme wildfire threat)	0	0	0	0	0	0
Wildland-Urban Interface Fire Threat	0	0	0	0	0	0
Dam Inundation (within inundation zone)	0	0	0	0	0	0
Sea Level Rise[1]	not applicable					
Tsunamis[2]	not applicable					
Drought[3]	not applicable					

[1] The sea level rise map is not a hazard map. It is not appropriate to assess infrastructure exposure to sea level rise.
[2] Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. Miles of exposed infrastructure is not an appropriate analysis for this hazard. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.
[3] Drought is not a hazard for roadways.

Infrastructure Exposure- Fiber Cable, Information Storage and Routing, Sanitary Sewer and Pump Station, and Storm Drains and Pump Stations

The planning team examined infrastructure not captured in the ABAG website. The following table uses the same criteria that ABAG uses when examining the impact to roadways, transit, and rail to examine the impact on other critical infrastructure within the city.

Hazard	Fiber Cable	Information Storage and Communication Routing Locations	Sanitary Sewer	Sewer Pump Stations	Storm Drains	Storm Drain Pump Stations
	Plan Year 2010	Plan Year 2010	Plan Year 2010	Plan Year 2010	Plan Year 2010	Plan Year 2010
	Miles	*Each*	*Miles*	*Each*	*Miles*	*Each*
Earthquake Shaking (within highest two shaking categories)	29 Aerial 33 UG	5	140	42	76	10
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility	29 Aerial 33 UG	5	140	42	76	10
Liquefaction Hazard (within CGS study zone)	29 Aerial 33 UG	5	140	42	76	10
Earthquake-Induced Landslides (within CGS study zone)	0	5	0	0	0	0
Earthquake Faulting (within CGS zone)	0	5	0	0	0	0
Flooding (within 100 year floodplain)		0				
Flooding (within 500 year floodplain)		0				
Landslides (within areas of existing landslides)	0	0	0	0	0	0
Wildfires (subject to high, very high, or extreme wildfire threat)	0	0	0	0	0	0
Wildland-Urban Interface Fire Threat	0	0	0	0	0	0
Dam Inundation (within inundation zone)	0	0	0	0	0	0
Sea Level Rise[1]	0	0	0	0	0	0
Tsunamis[2]	0	0	0	0	0	0
Drought[3]	0	0	0	0	0	0

[1] The sea level rise map is not a hazard map. It is not appropriate to assess infrastructure exposure to sea level rise.

[2] Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. Miles of exposed infrastructure is not an appropriate analysis for this hazard. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.

[3] Drought is not a hazard this infrastructure.

Exposure of City-Owned Buildings, Plus Critical Healthcare Facilities and Schools

The City of Alameda provided a list of the critical facilities it owns to ABAG. ABAG then provided a detailed assessment of the hazard exposure of each of the facilities as outlined in the tables below.

Exposure (Specific Critical Facilities Affected)		
Hazards	**Critical Facilities Affected**	**Comments**
Dam Failure Inundation	None	
Wildland-Urban Interface Fire Threat	None	
Wildfire Threat (moderate, high, very high, or extreme threat)	None	
Existing Landslide Areas	None	All facilities on surficial deposits (flat land)
FEMA Flood Zones	Fire Station 5, City Hall West, Alameda Point Gym, O'Club , Cartwright Substation	These facilities are in an area of undetermined but possible flood hazards.
Earthquake-Induced Landslides (within CGS zone)	None	
Earthquake-Induced Liquefaction (CGS zone)	All facilities	
Earthquake Liquefaction Susceptibility	All facilities	All facilities are either categorized with moderate or very high susceptibility.
Earthquake Shaking Potential	All facilities	All facilities are categorized by the two highest levels of shaking potential.
Sea Level Rise – 16 in.	Neptune Park, Chuck Corica Golf Course, Bay Fairway Rec Hall, Godfrey Park	These facilities are within the 16 in. sea level rise zone.
Sea Level Rise – 55 in.	Krusi Park, Rittler Park, Towata Park, City Hall West, Alameda Point Gym, O'Club, Housing Authority, Neptune Park, Animal Shelter/Pound, Maintenance Center, Central Equipment Garage, Bay Farm Island Branch Library, Leydecker Park, Chuck Corica Golf Course, Godfrey Park, Bay Fairway Rec Hall	Most of these facilities are either reinforced masonry with flexible floor and roof structures or light wood-frame buildings less than or equal to 5,000 sq. ft.
Tsunami	Krusi Park, Rittler Park, Towata Park, Fire Station 5, City Hall West, Alameda Point Gym, O'Club, Housing Authority, Neptune Park, Woodstock Park, Alameda Municipal Power (AMP), Cartwright Substation, Animal Shelter/Pound, Maintenance Service Center, Central Equipment Garage, Bay Farm Island Branch Library, Leydecker Park, Harrington Field, Fire Station 4, Tillman Park, Chuck Corica Golf Course, Bay Fairway Rec Hall, Godfrey Park, Shoreline Park	Most of these facilities are either reinforced masonry with flexible floor and roof structures or light wood-frame buildings less than or equal to 5,000 sq. ft.

The following table describes these facilities in terms of total number of facilities in each hazard area and also includes numbers of schools, health care facilities, and locally owned bridges and interchanges within the various hazard areas. This table is based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickcrit2010.html**.

Exposure (number of facility types)								
Hazard	**Health care facilities**		**Schools**		**Locally owned critical facilities**		**Locally owned bridges and interchanges**	
	Plan Year 2005	**Plan Year 2010**	**Plan Year 2005**	**Plan Year 2010**	**Plan Year 2005**	**Plan Year 2010**	**Plan Year 2005**	**Plan Year 2010**
Total Number of Facilities	*8*	*7*	*24*	*30*	*48*	*50*	*4*	*5*
Earthquake Shaking (within highest two shaking categories)	8	6	24	30	48	50	4	5
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility	8	7	24	30	48	50	4	5
Liquefaction Hazard (within CGS study zone)	8	7	23	30	46	50	4	5
Earthquake-Induced Landslides (within CGS study zone)	0	0	0	0	0	0	0	0
Earthquake Faulting (within CGS zone)	0	0	0	0	0	0	0	0
Flooding (within 100 year floodplain)	0	0	0	0	0	0	0	1
Flooding (within 500 year floodplain)	0	0	0	0	0	0	0	0
Landslides (within areas of existing landslides)	0	0	0	0	0	0	0	0
Wildfires (subject to high, very high, or extreme wildfire threat)	0	0	0	0	0	0	0	0
Wildland-Urban Interface Fire Threat	2	2	5	5	14	14	2	1
Dam Inundation	0	0	0	0	0	0	0	0
Sea Level Rise (exposed to 16in sea level rise) [1]	-	0	-	0	-	5	-	1
Sea Level Rise (exposed to 55in sea level rise) [2]	-	0	-	5	-	14	-	0
Tsunamis (within inundation area) [3]	-	0	-	1	-	26	-	4
Drought [4]	-	-	-	-	-	-	-	-

[1] Sea level rise data was not available in 2005
[2] Sea level rise data was not available in 2005
[3] Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.
[4] Drought will not affect locally owned facilities directly.

Repetitive Loss Properties

There are no repetitive loss properties in the City of Alameda based on the information at http://quake.abag.ca.gov/mitigation/floodloss/.

Other Risks

The City will work with ABAG to develop specific information about the kind and level of damage to buildings, infrastructure, and critical facilities which might result from any of the hazards previously noted.

National Flood Insurance Program

Alameda has participated in the National Flood Insurance Program (NFIP) since 1978. The City also participates in the Community Rating System (CRS) and is currently class 8. Every 5 years the City is re-evaluated and is currently in this process. Because the City participates, residents get a 10% discount on flood insurance if they are within the 100-year flood zone and a 5% discount if they are outside of the 100-year flood zone.

On May 4, 2009, FEMA Flood Insurance Rate Maps (FIRMs) changed for the City of Alameda. Four significant new areas were removed from the area of special flood hazard.

Mitigation Goals and Objectives

The goal of the ABAG multijurisdictional- local hazard mitigation plan (MJ-LHMP) is to maintain and enhance a disaster-resistant region by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters. This goal is unchanged from the 2005 plan and continues to be the goal of the City of Alameda in designing its mitigation program.

Mitigation Activities and Priorities

Completed Mitigation Actions

- During 2002 the alert and warning systems was installed for rapid shelter-in-place. An additional siren was added and upgrades to the alert and warning system were completed in 2009. In June 2009 the City contracted with Code Red, a nationally recognized automated telephone and text message system that can notify affected portions of the community, or the entire community when emergency alerts or notifications are needed. Additionally, the City has

Government Access television channel 15 which will permit broadcast of emergency messages and alerts as well as local radio station1280 am.

- In 2006, The Main Library was replaced with a new facility that meets current building codes.

Future Mitigation Actions and Priorities

As a participant in the 2010 ABAG multi-jurisdictional planning process, the staff of the City of Alameda helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage. A list of the mitigation strategies for Alameda County can be found on ABAG's website - http://www.abag.ca.gov/bayarea/eqmaps/mitigation/stratlist.html

The City also anticipates completion of a number of mitigation tasks over the next 5 years. This list includes implementation process, funding strategy, responsible agency, and approximate time frame.

The proposed projects include the following:

1. **Continued use of the Soft-Story Ordinance**, which contains mandatory compliance requirements with the purpose of improving seismic retrofit standards.
    - Responsible Department: Community Development Department
    - Funding Source: There are no funding sources from the City for any of these projects. However the City will waive permit fees if a soft story owner pulls a retrofit permit within 18 months of being notified they own a soft story building.
    - Mitigation Strategy: LAND f-2
    - Timeframe: on going
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

2. **Continued use of the Existing Wood Frame Ordinance**, which outlines voluntary minimum standards which shall substantially improve the seismic performance of these residential buildings
    - Responsible Department: Community Development Department
    - Funding source: Owner funded
    - Mitigation Strategy: LAND f-2
    - Timeframe: on going
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

3. **Continued Unreinforced Masonry Building Retrofit Ordinance**, which outlines voluntary minimum standards which shall substantially improve the seismic performance in the downtown areas.
    - Funding Source: Owner funded
    - Responsible Department: Community Development Department
    - Mitigation Strategy: LAND f-3
    - Timeframe: on going
    - Hazards mitigated: EQ, LS, WF, FL, SEC

4. **Continuation of Sewer and Storm System Rehabilitation**
    - Responsible Department: Public Work Department
    - Funding Source: Public Works Department
    - Mitigation Strategy: LAND f-1
    - Timeframe: on going
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

5. **Participation in Interoperable Communications System**
    - A P25 Compliance Assessment Program (CAP). Communications systems with region wide interoperability.
    - Economic Analysis: Risk analysis and economic loss demonstrated the need for proposed investment in a regional program.
    - Responsible Department: City Manager, Fire and Police, and Public Works Departments
    - Funding Source: City General Funds and any grant funds which can be identified and secured
    - Timeframe: Complete operability targeted for FY 2013

6. **Fire Station #3 Relocation / Replacement (Deferred from 2005 Plan)**
    - Was included in 2005 as a mitigation strategy but was deferred due to funding issues.
    - Responsible: Fire Department, Public Works Department, City Manager with approval from council
    - Funding Source: Underfunded, looking for additional funding at this time
    - Mitigation Strategy: LAND f-1
    - Timeframe: Target next three to five years
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

7. **New Emergency Operations Center**
    - Responsible: Fire Department, Police Department, Public Works Department, and City Manager with approval from Council
    - Funding Source: Unfunded, looking for funding at this time
    - Mitigation Strategy: LAND f-1
    - Timeframe: unknown at this time
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

8. **Back up Dispatch Operations Center for Alameda Municipal Power** (AMP)- An off-site back-up dispatch center is critical for maintaining continuity in the Bulk Power System and AMP's transmission and distribution system in the event of a large scale disaster. A study is necessary to determine acceptable sites, modifications and/or upgrades required to accommodate critical dispatch systems and investments essential to establishing suitable dispatch redundancy.
    - Responsible: AMP
    - Funding Source: Unfunded, looking for funding at this time
    - Mitigation Strategy: LAND f-1
    - Timeframe: Unknown at this time
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

9. **Seawater Surge Wall Around Cartwright Substation**- A diversion wall that encircles the Cartwright substation would deflect a destructive water surge and preserve Cartwright's ability to operate during a destructive natural event. A study is necessary to determine the two options and run models to predict barrier effectiveness in mitigating the complete inoperability and/or destruction of the Cartwright Substation.
    - Responsible: AMP
    - Funding Source: Unfunded, looking for funding at this time
    - Mitigation Strategy: LAND f-1
    - Timeframe: Target of 2015
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

10. **Secondary Source of Power to Island** - Northern California Power Authority (NCPA) operates two electric producing turbines in Alameda that are typically used as "peaker" units and called upon infrequently by the CalISO when energy requirements reach critical levels. Although these units could be called upon to operate in the aftermath of an earthquake emergency, their power supply would only adequately support the most critical services in Alameda and because of fuel requirements and operation limitations it is not known if they could operate reliably for an extended amount of time such as weeks or months. To address this "Islanding" in a disaster, three solutions have been considered. A study is necessary to determine which option would be most effective at mitigating a long-term power outage caused by a disastrous disruption in service from PG&E's transmission.

    - Responsible: AMP
    - Funding Source: Unfunded, looking for funding at this time
    - Mitigation Strategy: LAND f-1
    - Timeframe: Unknown at this time
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

11. **Critical Senior and Low Income Housing Facilities Retrofit**-

    - Structural evaluation and retrofit to current seismic standards.
    - Responsible: Alameda Housing Authority
    - Funding Source: Underfunded, looking for additional funding at this time
    - Mitigation Strategy: LAND f-1
    - Timeframe: on going
    - Hazards mitigated: EQ, LS, WF, FL, DR, SEC

12. **City owned Building Seismic Retrofit Upgrade**

    - Structural evaluation and retrofit to current seismic standards.
    - Responsible: Public Works Department
    - Funding Source: Underfunded, looking for additional funding at this time

- Mitigation Strategy: LAND f-1
- Hazards mitigated: EQ, LS, WF, FL, DR, SEC

13. Shoreline Improvements

- Storm and flood protection improvements and sea level rise improvement including miscellaneous shoreline repair
- Responsible: Public Works Department
- Funding Source: Unfunded, looking for funding at this time
- Mitigation Strategy: Landslide and Erosion- d-4
- Timeframe: Unknown at this time
- Hazards mitigated: LS

On-Going Mitigation Strategy Programs

The City has many on-going mitigation programs that help create a more disaster-resistant community. The following list highlights those programs identified as Existing Programs in the mitigation strategy. Others are on-going programs that are currently underfunded. It should be noted that while the ABAG model for mitigation strategies identifies a number of priorities that may be underfunded by agencies, Alameda has historically been at the forefront of pursuing hazard mitigations with programs such as the award winning soft story seismic retrofit program which ABAG recommends for future consideration. Alameda has also adopted the current uniform building codes for all new construction that meet seismic standards for new construction.

- **Soft-Story (Seismic Retrofit) Program**
  The City of Alameda is renowned for its historic wood-framed architecture, and there are many buildings that are classified as soft-story in the City. In March 17, 2009, the Alameda City Council adopted and passed the Soft-Story Ordinance, which contains mandatory compliance requirements with the purpose of improving seismic retrofit standards.

- **Existing Wood Frame and Unreinforced Masonry Building Retrofit Ordinance**
  On August 15, 2006, the City of Alameda adopted the Existing Wood Frame Ordinance, which outlines voluntary minimum standards that substantially improve the seismic performance of these residential buildings but will not necessarily prevent all earthquake damage as well as the unreinforced Masonry Building Retrofit Ordinance.

- **Certification and Training Requirements**
  Post Disaster Assessment Certification for all inspectors, code enforcement officers and planners.

- **Sewer System Rehabilitation**
  On a regular basis, Public Works inspects sewers and performs a conditions assessment of the City's 46 pump stations and 140 miles of sanitary sewer system. Based on these studies, the Annual Cyclic Sewer Program replaces and rehabilitates old infrastructure in order to maintain the structural and operational integrity of the City's sewer system, as well as installing back-up generators and upgrading pump stations to current standards.

- **Storm System Rehabilitation**
  This program includes reconstructing portions of street cross-culverts, outfalls, inlets, and storm drainage mains, as well as installing back-up generators and upgrading pump stations to current standards. The program improves system capacity, reduces overland flooding at street intersections, and provides backup power at pump stations in the event of a loss of power.

- **Development of interoperable communications**
  System upgrades to facilitate interoperable communications for first responders from cities, counties, special districts, state, and federal is currently being conducted in Alameda County (GOVT-c-7).

- **Maintain and update the City of Alameda Standardized Emergency Management System Plan** The City staff will meet periodically to maintain and update the Emergency Management Plan, as needed **(**GOVT-c-12).

- **Participation in general mutual-aid agreements**
  Alameda has agreements with adjoining jurisdictions for cooperative response to fires, floods, earthquakes, and other disasters (GOVT-c-13).

- **The City hosts quarterly Disaster Council meetings**
  The Alameda Disaster Council is a group of local first response agencies responsible for community safety and coordination following any disaster, insuring that there will be coordinated response and recovery efforts by all local agencies. The Alameda Disaster Council includes representatives from City government, the Alameda Unified School Districts, the American Red Cross, EBMUD, Alameda Hospital, Alameda CERT, Alameda ARES, Coast Guard, Senior Care Facilities, Faith Based Organizations and non-profit public service agencies.

- **Incorporate FEMA guidelines** and suggested activities into local government plans and procedures for managing flood hazards (FLOOD-c-2).

Incorporation into Existing Planning Mechanisms

The City of Alameda has several planning mechanisms

- General Plan – Safety Element
- Capital Improvements Plan
- California Environmental Quality Act (CEQA)

The City of Alameda has a Health and Safety Element in its General Plan that establishes development policies for the period 1990-2010. Included are a discussion of seismic, geologic and soils hazards, fire hazards, and flooding. Also, the City participates in a Capital Improvements Plan update on an annual basis. In addition, the City enforces the requirements of the California Environmental Quality Act (CEQA) requirements which, since 1988, have required mitigation for identified natural hazards. The City's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Plan Update Process

As required by the Disaster Mitigation Act of 2000, the City of Alameda will update this plan annex at least once every five years, by participating in a multi-agency effort with ABAG and other agencies to develop a multi-jurisdictional plan.

The City of Alameda will ensure monitoring of this Annex on an on-going basis. However, the major disasters affecting our County, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. Finally, the Annex will be a discussion item on the agenda of the meeting of department heads at least once a year. At that meeting, they will evaluate the Annex in light of technological and budgetary changes during the past year or other significant events. The department heads will be responsible for determining if the plan needs to be updated.

The Fire Department Disaster Preparedness Division will contact ABAG four years after this plan is approved to ensure that ABAG will undertake the plan update process. If so, the City of Alameda will participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The public will continue to be involved whenever the plan is updated and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, the City will provide the opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and meeting logistics.

Mitigation Plan Point of Contact

Name: Captain Sharon Oliver
Title: Disaster Preparedness Coordinator, City of Alameda Fire Department
Mailing Address: 1300 Park St. Alameda, CA 94501
Telephone: 510-337-2100
Email: soliver@alamedafire.org

Alternate Point of Contact
Name: Chief Ricci Zombeck, City of Alameda Fire Department
Title: Division Chief
Mailing Address: 1300 Park St. Alameda, CA 94501
Telephone: 510-337-2100
Email: rzombeck@alamedafire.org

Exhibit A – Jurisdiction Boundary Map

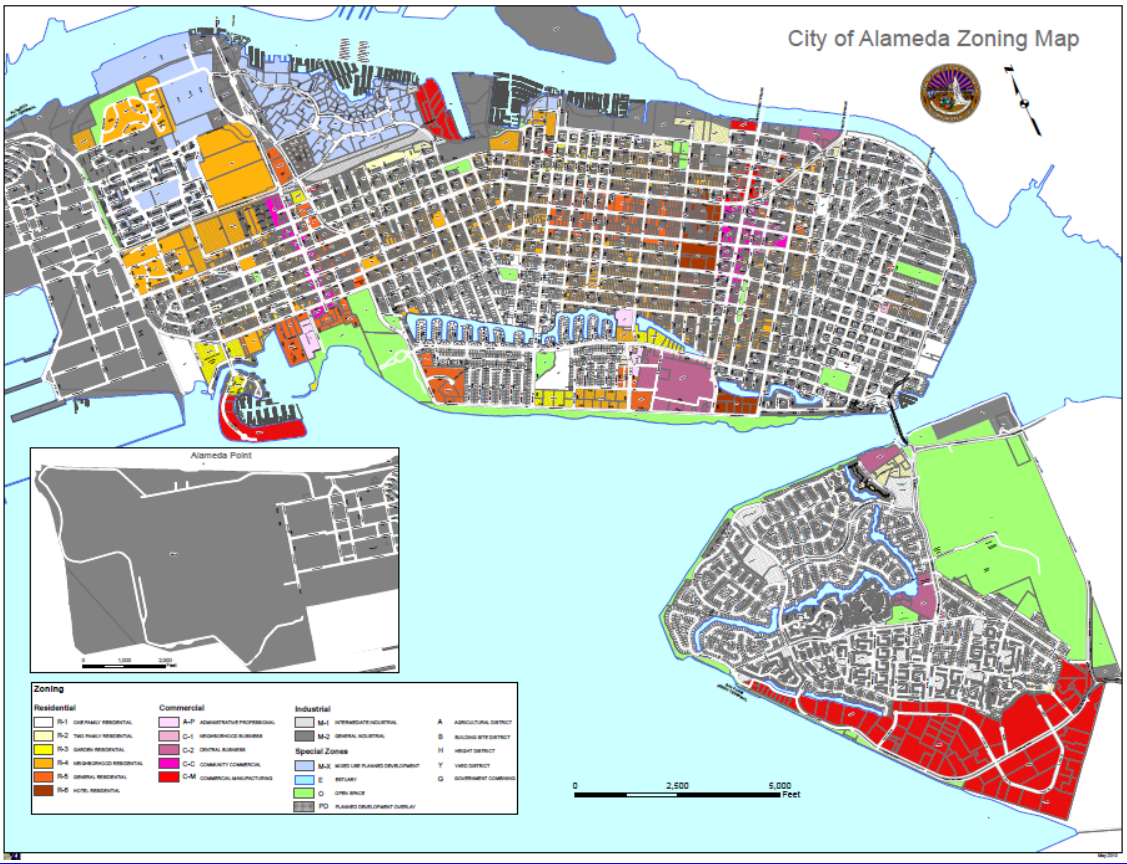

Exhibit B – Public Meeting Announcements

Acct.# 2000600
Date: October 10 ,2011

Pages: 1
mail:hillslegals@bayareanewsgroup.com
From: Nancy McPeak
Tel: 510.747.6854 / Fax: 510.747.6853

LOCAL HAZARD MITIGATION PLAN
COMMUNITY WORKSHOP

The City of Alameda invites you to a public forum to discuss the 2010 Annex to the Association of Bay Area Governments Local Hazard Mitigation Plan.

Please come and share your comments on this important document.

Tuesday, October 18, 2011
6:00 p.m.
Alameda City Hall
2263 Santa Clara Avenue,
Third Floor, Room 360
Alameda, California

Publish Date: October 14, 2011

Exhibit C- List of Critical Facilities and Infrastructure

	City Owned Buildings	
1	Animal Shelter	1590 Fortmann Way
2	Bay Farm Library	3221 Mecartney Road
3	Building 134, Gymnasium	1101 W. Redline Avenue
4	Building 60, Officers Club	641 W. Redline Avenue
5	Building 397, Storage	1690 Orion Street
6	Building 76, Swimming Pool	1101 W. Redline Avenue
7	Building 522, Fire Dept. Conference Room	431 Stardust Place
8	Building 2, Wing 2	1025 W. Midway Avenue
9	Carnegie Library	2264 Santa Clara Avenue
10	City Hall	2263 Santa Clara Avenue
11	City Hall West	950 W. Mall Square
12	Ferry Terminal	2990 Main Street
13	Fire Station No. 1	2401 Encinal Avenue
14	Fire Station No. 2	635 Pacific Avenue
15	Fire Station No. 3	1709 Grand Street
16	Fire Station No. 4	2595 Mecartney Road
17	Fire Station No. 5, Building 6	950 W. Ranger Avenue
18	Franklin Park Building	1432 San Antonio Avenue
19	Godfrey Park Recreation Center	281 Beach Road
20	Krusi Park Building	900 Mound Street
21	Leydecker Park Recreation Center	3225 Mecartney Road
22	Lincoln Park Recreation Center	1450 High Street
23	Littlejohn Park Building	1401 Pacific Avenue
24	Longfellow Park Recreation Center	520 Lincoln Avenue
25	Main Library	1550 Oak Street
26	Maintenance Service Yard	1616 Fortmann Way
27	Mastick Senior Center	1155 Santa Clara Avenue
28	McKinley Park Recreation Center	2165 Buena Vista Avenue
29	Police Admin Building	1555 Oak Street
30	Recreation & Park Building	2226 Santa Clara Avenue
31	Tillman Park Building	220 Aughinbaugh Way
32	Veterans Memorial Building	2203 Central Avenue

33	Washington Park Building	740 Central Avenue
34	West End Library	788 Santa Clara Avenue
35	Woodstock Park Recreation Center	351 Cypress Street
36	Bay Fairway Recreation Hall	300 Island Dr.
	Housing Authority	
37	Independence Plaza Senior Housing	703 - 711 Atlantic Avenue
38	Anne B. Diament Senior Plaza	920 Park Street
39	Kindred Transitional	516 Willow Street
40	Marina Garden Nursing Center	3201 Fernside Blvd.
41	Waters Edge Nursing Home	2401 Blanding Avenue
42	Waters Edge Lodge	801 Island Drive
43	Golden Age Bayside Assisted Living	218 Channing Way
44	Alameda Healthcare & Wellness	430 Willow Street
45	Sunset Home for the Elderly	428 Sunset Road
46	Alameda Elder Services	1721 Webster Street
	AMP	
47	Cartwright Substation	West Atlantic and Main Street
48	Jenny Substation	Clement
49	East Transfer Station	High and Marina
50	West Transfer Station	Near Webster Street Tube
51	Oakland Side East Transfer Station	Tidewater
52	Dispatch Operation Center	2000 Grand Street
	Privately Owned Facilities	
53	AT& T building	Central Ave.
54	Main Street Ferry Terminal	2990 Main Street
55	Harbor Bay Ferry Terminal	299 Adelphian Way
56	Posey/Webster Tubes	
57	Park Street Bridge	
58	Fruitvale/Miller-Sweeney Bridge	
59	High Street Bridge	
60	Bay Farm Island Bridge (vehicular)	
61	Bay Farm Island Bridge (bicycle)	

	AUSD- Schools	
62	Bay Farm Elementary	200 Aughinbaugh Way
63	Earhart Elementary	400 Packet Landing Rd
64	Edison Elementary	2700 Buena Vista Ave
65	Franklin Elementary	1433 San Antonio Ave
66	Henry Haight Elementary	2025 Santa Clara Ave
67	Lum Elementary	1801 Sandcreek Way
68	Otis Elementary	3010 Fillmore St
69	Paden Elementary	444 Central Ave
70	Ruby Bridges Elementary	351 Jack London Ave
71	Saint Philip Neri Catholic Elementary	1335 High St
72	Washington Elementary	825 Taylor Ave
73	Lincoln Middle School	1250 Fernside
74	Wood Middle School	420 Grand St
75	Alameda High School	2201 Encinal Ave
76	Encinal High School	210 Central Ave
77	Island High School	1900 Third St
78	ASTI School Loop Website	555 Atlantic Ave
79	Alameda Adult School	2250 Central Ave
80	Woodstock Child Development Center	500 Pacific Ave
81	Alameda Community Learning Center	210 Central Ave
82	Bay Area School of Enterprise (BASE)	1900 Third St
83	Nea Community Learning Center	500 Pacific
84	Academy of Alameda	401 Pacific
85	College of Alameda	555 Ralph Appezzato Memorial Parkway
86	St. Joseph Elementary School	1910 San Antonio Ave.
87	Saint Joseph Notre Dame High School	1011 Chestnut Street
88	St. Philip Neri School	1335 High Street
	Health Care Facilities	
89	Alameda Care Center	430 Willow St.
90	Alameda Hospital	2070 Clinton Ave.
100	Bay View Nursing Center	516 Willow St.
101	Crown Bay Nursing Center	508 Westline Dr.

102	Marina Garden Nursing Center	3201 Fernside Blvd.
103	South Shore Convalescent Hospital	625 Willow St.
104	Waters Edge	2401 Blanding Ave.
	Critical Infrastructure	
105	115 kV Submarine Cables	
106	142 mile of streets	
107	21 Major Street Arteries / Access	
108	81 traffic signals	
109	140 mile of sanitary sewer	
110	46 sewer pump stations	
111	76 miles of storm drains	
113	11 storm drain pump stations	
114	38 Fallout Pipes	
115	29 miles of aerial fiber network	
116	33 miles of UG Fiber Network	
117	115 kV Overhead Transmission	
	Information Technology - IT	
118	City Hall Servers	2263 Santa Clara Ave
119	Fiber Routing Station- AMP	2000 Grand Ave.
120	Fire Station #1 Dispatch Routing Equipment	2401 Encinal Ave.
121	PD- Routing Infrastructure	1555 Oak St.
	Park, Playground, and Facility Locations	
122	Alameda Point Gym	1101 W. Redline Ave
123	Alameda Recreation & Park Dept.	2226 Santa Clara Avenue
124	Bayport Park	301 Jack London Avenue
125	Bill Osborne Model Airplane Field	Doolittle Dr. and Harbor Bay Pkwy
126	Chuck Corica Golf Complex	1 Club House Dr.
127	City View Skate Park	1177 West Redline Avenue
128	Dog Park, Robert Crown Memorial Beach	Next to Washington Park Tennis Courts
129	Emma Hood Swim Center	2256 Alameda Ave
130	Encinal Boat Ramp	Central Ave, behind Encinal High School
131	Encinal Swim Center	230 Central Ave
132	Franklin Park	1432 San Antonio Ave

133	Godfrey Park	281 Beach Road
134	Grand St. Boat Ramp	North End of Grand St
135	Harrington Field	3400 Oleander Avenue
136	Jackson Park	2430 Encinal Avenue
137	Krusi Park	900 Mound Street
138	Leydecker Park	3225 Mecartney Road
139	Lincoln Park/Harrison Center	1450 High Street
140	Littlejohn Park	1401 Pacific Avenue
141	Longfellow Park	520 Lincoln Avenue
142	Main Street Linear Park	at Atlantic Avenue
143	Marina Cove Waterfront Park	1591 Clement Street
144	McKinley Park	2165 Buena Vista Avenue
145	Meyer's House & Garden Museum	2021 Alameda Avenue
146	Neptune Park	2301 Webster Street
147	O'Club	641 West Redline Avenue
148	Rittler Park	1400 Otis Drive
150	Shoreline Park	2801 Seaview Parkway
151	Tillman Park	220 Aughinbaugh Way
152	Towata Park	3315 Bridgeway Isle
153	Washington Park	740 Central Avenue
154	Woodstock Park	351 Cypress Street